

β -1,4-Gal-T1 (A-3): sc-515551

BACKGROUND

The β -1,4-Gal-T1 gene, which maps to chromosome 9p21.1, is one of seven β -1,4-galactosyltransferase (β -1,4-Gal-T) genes. These genes encode type II membrane-bound glycoproteins that appear to have exclusive specificity for the donor substrate UDP-galactose. These protein products transfer galactose in a β 1,4 linkage to similar acceptor sugars, such as GlcNAc, Glc, and Xyl. These type II membrane glycoproteins have an N-terminal hydrophobic signal sequence that directs the protein to the Golgi apparatus and remains uncleaved to function as a transmembrane anchor. The β -1,4-Gal-T1 gene is unique among the β -1,4-Gal-T genes in that it encodes an enzyme that participates in both glycoconjugation and lactose biosynthesis. The β -1,4-Gal-T1 protein is encoded by two transcripts with approximate lengths of 4.1 kb and 3.9 kb, which differ only at their 5' ends. The longer transcript encodes the type II membrane-bound, *trans*-Golgi resident protein involved in glycoconjugate biosynthesis. The shorter transcript encodes a protein that is cleaved to form the soluble lactose synthase.

CHROMOSOMAL LOCATION

Genetic locus: B4GALT1 (human) mapping to 9p21.1.

SOURCE

β -1,4-Gal-T1 (A-3) is a mouse monoclonal antibody raised against amino acids 1-160 mapping at the N-terminus of β -1,4-Gal-T1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

β -1,4-Gal-T1 (A-3) is available conjugated to agarose (sc-515551 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515551 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515551 PE), fluorescein (sc-515551 FITC), Alexa Fluor[®] 488 (sc-515551 AF488), Alexa Fluor[®] 546 (sc-515551 AF546), Alexa Fluor[®] 594 (sc-515551 AF594) or Alexa Fluor[®] 647 (sc-515551 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-515551 AF680) or Alexa Fluor[®] 790 (sc-515551 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

β -1,4-Gal-T1 (A-3) is recommended for detection of β -1,4-Gal-T1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for β -1,4-Gal-T1 siRNA (h): sc-40616, β -1,4-Gal-T1 shRNA Plasmid (h): sc-40616-SH and β -1,4-Gal-T1 shRNA (h) Lentiviral Particles: sc-40616-V.

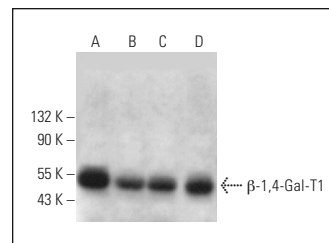
Molecular Weight of β -1,4-Gal-T1: 50/52 kDa.

Positive Controls: JAR cell lysate: sc-2276, SK-BR-3 cell lysate: sc-2218 or HeLa whole cell lysate: sc-2200.

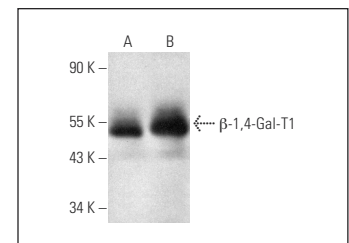
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



β -1,4-Gal-T1 (A-3): sc-515551. Western blot analysis of β -1,4-Gal-T1 expression in SK-BR-3 (A), NTERA-2 cl.D1 (B), Hep G2 (C) and T-47D (D) whole cell lysates.



β -1,4-Gal-T1 (A-3): sc-515551. Western blot analysis of β -1,4-Gal-T1 expression in HeLa (A) and JAR (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Wei, H., et al. 2019. SSeCKS promoted lipopolysaccharide-sensitized astrocytes migration via increasing β -1,4-galactosyltransferase-I activity. *Neurochem. Res.* 44: 839-848.
- Wang, J., et al. 2021. High-risk HPV16 E6 activates the cGMP/PKG pathway through glycosyltransferase ST6GAL1 in cervical cancer cells. *Front. Oncol.* 11: 716246.
- Zhang, J., et al. 2022. Loss of RBMS1 promotes anti-tumor immunity through enabling PD-L1 checkpoint blockade in triple-negative breast cancer. *Cell Death Differ.* E-published.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.